

REMARKS

The rejection of the claims under 35 USC 103 for obviousness from the Applicant's prior art disclosure that discloses the claimed method and fuel injector except for their claimed characterizations and the newly cited Machinery's Handbook overlooks limitations of the claimed characterizations "to achieve a predetermined working life (LF) of said injector (1)" and, therefore, is traversed.

The claimed invention is characterized by the life of the injector which depends on the life of the seal which depends on the size of the seal. Page 2482 of the cited Machinery's Handbook describes only the "... initial diametral squeeze of the ring" Initial diametral size does not teach toward seal or injector (seal-use) life, as claimed.

In fact, page 2483 of the cited Machinery's Handbook teaches away from the teaching of the claimed invention, which is to maintain the extruded "tail" of seal material shown in two of its changing positions at the lower right of Fig. 2 of the application. Page 2483 of the Machinery's Handbook indicates:

The [seal receiving] groove must be large enough to accommodate the maximum expansion of the ring or the ring may extrude into the clearance gap In a dynamic application, the extruded ring material will quickly wear and fray, severely limiting seal life.

This is the problem the teaching of the claimed invention describes in the paragraph bridging pages 5 and 6 of the application, and not the solution described and claimed, for example, from page 6, line 5, of compensating for the known wear with the size of the seal.

The invention of claims 8, 9, 17 and 18 adds that the seal is Teflon. Those in the art will understand that Teflon will be "drawn along gap M" as described on page 5, line 25, of the application and shown particularly in Fig. 2. Therefore, such seals are particularly limited

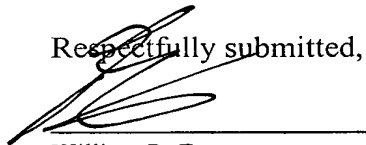
in life for the reasons described in Machinery's Handbook to require particularly the claimed seal size compensation.

The Machinery's Handbook page 2483 does not teach this problem, let alone the claimed solution. Instead, Machinery's Handbook discloses O-ring seals made of rubber, and mentions Teflon only in connection with the manufacture of Backup rings, which are not seal elements but anti-extrusion elements. Therefore, this reference fails to suggest the use of Teflon (and its behavior) to manufacture seal elements for injectors, which has been proposed for the first time in the application.

The way of working of these particular seals is based on the extrusion of material through the gap between the injector body and the valve body, and the lifetime of these seals ends when all the material has been extruded. The lifetime may be foreseen, and the manufacture of the injector may be planned in such a manner that its lifetime be equal to the lifetime of the seal. In turn, the seal is appropriately sized in such a manner that the lifetime of the injector be equal to the lifetime of the engine on which it is mounted.

Reconsideration and allowance are, therefore, requested.

Respectfully submitted,



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